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EDITORIAL

The Need for Research

Research in Science, Medicine and in any other phases of human existence, not excluding industry, goes on all about us, and rightly so, but have we ever stopped to consider how much research is necessary in Cost Accounting?

Like a lot of other things the profession of Cost Accounting will make tremendous progress in war time, or at least it should, and many phases of this specialized branch of accounting will possibly undergo considerable change. It would seem that this Society and its members are in a mighty fine position to do this research work and it should be done for the benefit of all.

With new industries springing up and the likelihood of continued extraordinary industrial activity in this country even in the years following the war, there is a definite need now for research in Cost Accounting and we, who are in a position to do this research work, should not fail.

The matter of wage incentives, depreciation, inventory valuation, production control and many other things stand out as instances of where one may look for improvements in the matter of costing.

Undoubtedly many members are accumulating data which will be invaluable, and where possible such data should be placed at the disposal of the profession generally.

This could be done through the various chapters of the Society or through a Research Board.

Uniformity in Cost Accounting, especially in similar industries, is something that has been sadly lacking in the past, and there is no reason why such uniformity cannot be accomplished at least in some measure if the correct steps are taken.

The matter of Distribution Cost is another phase of the situation which, in the past has been sadly neglected and one can think of few better contributions that the Society and its members can make to the profession generally.

Undoubtedly this is a matter which should be taken up by every chapter during the coming season.

Across the Secretary's Desk

From time to time there comes across this desk, letters from various members and on various subjects. Some are expressing thanks for what the writers call favours, but which are in reality another service, others asking for advice, some seeking new employment and, of course, some from chapter

secretaries. We are always glad to hear from individual members on any subject, and we were particularly happy to receive a long letter from Jack Walsh, Secretary of the Windsor Chapter, in which he informs us that the program of the chapter has been tentatively arranged. Of course finishing touches have yet to be put to the arrangements, but in the main the program is there. In view of the extreme difficulty in lining up speakers too far ahead during wartime with all its rush of business, we think that Jack and his colleagues have done a marvellous job. Incidentally the Windsor Chapter has made a grand start to capture the Fernie Trophy.

Four applications for membership to that chapter have already been received, and it begins to look as though Windsor means business in this connection as it usually does in other direction.

This office recently received a visit from our Dominion President, Don Patton, who spent his holidays in this vicinity in order that he might go through a mass of detail here at the office in connection with the Society's work. Needless to say, Don is always welcome. He is one of the hardest workers for the Society it has ever been our privilege to know, and during this visit plans were laid for what we both consider will be the very best season in our history.

Incidentally, Don has promised to come up to Ontario again early in November to speak at several meetings, and this should be good news to all those who will have a chance to meet him and to hear him.

Notwithstanding the fact that many members are extremely busy these days we are looking forward to even better attendances at chapter meetings during the coming season and trust that you have already planned to take in as many as possible. It will not only benefit you but also your colleagues.

R. D.

New Members

Montreal Chapter.

F. B. Hoyland, Noorduyn Aircraft Ltd., Montreal.

Toronto Chapter.

T. W. Hall, Stovell Mfg. Co., Ltd., Toronto.

G. McKnight, Canadian Gypsum Co. Ltd., Toronto.

Hamilton Chapter.

F. E. Kershaw, Canadian Westinghouse Co. Ltd.
(Company transfer from H. J. Muir).

E. J. Robinson, Canadian Westinghouse Co. Ltd.

W. J. Stookes, Mohawk Mills Ltd., Hamilton.

A. N. Hunt, Remington Rand Ltd., Hamilton.

Niagara Chapter.

L. T. Bradley, C.P.A., C.G.A., Beaver Wood Fibre Co. Ltd., Thorold.

J. M. Rennie, McKinnon Columbus Chain Co. Ltd., St. Catharines.

Windsor Chapter.

A. Stockman, Windsor Utilities Commission, Windsor.

N. Wrigglesworth, Chrysler Corp. of Canada Ltd.

A. Wardle, Universal Button Fastening & Button Co. of Canada Ltd.

N. C. Silk, Kelsey Wheel Co., Ltd.

Literature Received

Stores Records and Administration.

The Accountants Journal. July.

Describes the main uses of Stores Control, Stock Record, Cards, etc.

The Modern Factory—Budgeting.

Australian Accountant. July.

A well written and interesting article dealing with the compilation and use of a Factory Budget.

Criticism of a Balance Sheet.

Australian Accountant. July.

A most interesting article which should be read by all accountants.

The Alachusetts Cotton Mills.

N.A.C.A. Aug. 1.

A very complete and most interesting Case Study. Describes fully a cost system in use in the Textile Industry.

Internal Control.

N.A.C.A. Aug. 15.

A Panel Discussion in complete form and one which should be read and studied by all those interested in this subject.

Case Study of a Standard Cost System.

N.A.C.A. Sept. 1.

A very interesting Case Study of a Standard Cost System in the textile industry.

Punched Card Accounting from the Audit Viewpoint.

Journal of Accountancy. September.

A very complete and interesting article with illustrations which gives a thorough insight into a system of Punched Card Accounting.

Internal Control from the Viewpoint of the Auditor.

Journal of Accountancy. September.

A very interesting article which should be read by all accountants and executives.

Distribution Costs—A New Frontier for Accounting.

Journal of Accountancy. September.

A most interesting article on a phase of Cost Accounting which has been too much neglected.

Membership Fees

A number of Membership Fees are now overdue and Members are asked to kindly remit as early as possible.

A Cost and Production System for a Chocolate and Confectionery Factory

A Cost Accounting Thesis submitted in connection with the Society's Examinations.

By

R. J. DUSTAN

This is a general description of a Cost and Production system in use in this industry. A very large number of forms and illustrations was included with this article, but unfortunately it is impossible to produce them. However, at the close of this thesis there is a general description of the forms used in each department which is inserted in order that an idea may be given of the type of forms in use.—Editor.

General Description of Cost System.

The company whose cost system is described in this thesis is one of the largest chocolate and confectionery manufacturers in Canada. Their lines are very complete, covering every class of confectionery. They manufacture their own chocolate for moulded chocolate lines and coated goods, as well as supplying bulk chocolate to other manufacturers.

Materials for the confectionery business are extremely varied and come from many distant parts of the world, as well as many local products. This necessitates a large investment and, frequently, very heavy inventories. Purchasing is, therefore, a major executive function.

A large proportion of the confectioner's raw materials consist of highly finished and refined products of other manufacturers, such as sugars, starches, flavoring essences, fancy printed papers for box wraps, etc.

Labor saving machinery is highly developed in this industry and the factory is very completely equipped.

This entails maintaining a complete machine shop for the constant work of repairing and overhauling this equipment. In addition to this work, simple machines are built and assembled right in the factory.

The factory as a whole is organized in three productive divisions which all receive service from the service department.

They are first the chocolate division, processing chocolate from the raw cocoa beans and including a milk condensing department.

Then there is the confectionery division proper, known as the Bon Bon division, which manufactures and packs the goods. This type of manufacturing is frequently found as a separate concern, buying its chocolate coatings and packages outside.

The Company also includes a complete set up paper box factory, in which they manufacture a large proportion of their packages.

They buy a considerable amount of folding boxes and cartons outside for some of the cheaper lines.

These folding boxes require special machines and can be produced very cheaply, provided the quantities required are large enough to absorb the expensive set-ups.

The box division includes a small printing department which handles a lot of the printing in connection with the box factory, as well as wrappers for five cent bars and so on.

The really fancy package wraps for 1 lb. and 2 lb. packages of fine chocolates, are quite works of art and are mostly bought outside from concerns which specialize in work of this kind.

It will be noticed that most of the lines are processed in a succession of different departments. A one pound package of high grade chocolates, retailing for a dollar, represents a variety of fine materials gathered, literally, from the corners of the earth and then processed in every department of the factory.

The final packing is an assembling operation, dependent on every separate detail being all ready together in the packing department.

A very little consideration will make it evident that this calls for a high-grade of organization and presents a complicated cost picture.

While one general plan is followed through the factory in gathering costs, the departments differ very much in character.

Some departments are simple processes, turning out a single bulk product, which it would be very difficult to trace to its final form in goods ready for sale, such as condensed milk for milk chocolate.

While it is possible to estimate fairly well how much condensed milk has gone into any given package of finished goods, it is quite out of the question, as a practical piece of accounting, to say just where any particular day's run is used in terms of orders for finished goods.

Other departments manufacture a great variety of different lines, say centres, which they make strictly to order to fill the requirements of the dipping departments (either hand or machine dipping).

The costs in these departments are really job costs, although a given order of centres will eventually find its way into a number of different assortments and orders for finished goods.

It is apparent from the above that the only way in which costs can be built up at all accurately, is to treat each department by itself and reduce the department costs on each line of goods it turns out to a unit basis, such as cost per hundred pounds and per pound.

Since the cost system in each division of the factory is organized along the same lines, it will be sufficient to give a detailed description of one division only, showing how standard costs are worked out and applied.

For this purpose I shall take the most important division, the Bon Bon division.

As the confectionery manufacturing business is carried on according to fairly exact formulae it lends itself to a simplified form of standard cost system.

In the job departments standard cost estimates are built up from regular job cost sheets, which are run through on all new lines and old ones also when changes are made.

In theory, of course, it would be possible to cost each order this way, but as a practical matter it would be more costly than could be justified.

The job costs sheets gather the actual direct labour and materials on each run.

The process departments are given standard allowances, obtained by averaging costs over a period.

Accumulated costs are not charged from one department to another, but are added up for each line manufactured and then charged to finished goods

at one figure per hundred pounds. This is done from the Finished Goods ledger at the closing period.

Also, the goods as sold, are not processed as distinct lines through the whole course of manufacture.

In the case of goods which are packed in assortments, such as the familiar pound box of candy, the various lines included in the box are manufactured separately and kept in temporary storage (finished parts stock) until drawn on for packing as required. Also the same piece may be used in several different assortments.

Materials.

The material costs are figured for 100 lbs. of each line at current standard rates, which are revised every quarter.

Materials are delivered to the departments which use them, but are charged to the factory as a whole.

A careful perpetual inventory is kept on bin cards and in the factory stock ledger.

The bin cards are filled in by the stock truckers delivering the goods, they are checked with the stock ledger accounts as they become filled up and the balances corrected if necessary before opening a new card.

The factory is shut down twice a year—January 1st and July 1st—for a general clean-up and stock taking, when the books are also balanced.

All balances of stock in the storerooms are checked at these times and the books are corrected as necessary.

The work in process is also listed and valued (work in process inventory) at the same time, in order to close the books.

Owing to the nature of the work it is not practical to assign individual material issues to the various production orders in which they are used.

Sugar and glucose, for instance, are not "issued" at all in the ordinary sense. They are continually available to the departments using them and the balance on hand is checked once a week.

This, of course, suggests a process cost system, but, owing to the great variety of lines, made to definite orders, job cost methods have to be used in determining costs.

To sum the matter up the standard value of materials issued to the factory can be obtained from the stock ledger and compared in total with the standard value of materials required (according to the formulae) to manufacture the goods produced and delivered to finished stock, starting and closing inventories of work in process being, of course, taken into account.

Labor.

Labor is accounted for on a strictly departmental basis, each department having its own series of clock card numbers.

Actual labor costs are gathered in the usual way through the time clocks and pay roll analysis. Debit and credit slips are used to report employees loaned from one department to another, also work for the sales department or jobs of a special nature, not included in the ordinary overhead of the department.

The direct labor in each department, necessary for each line handled in the department, is determined as mentioned above, by job card methods or by averaging, and a standard allowance is calculated for each line per 100 lbs. or per 1,000 boxes, as the case may be.

The direct labor can be determined very closely, as the work is well standardized.

Indirect labor varies constantly through the year both in amount and in proportion to direct; due to the varying length of work week at different seasons, giving a varying proportion of clean-up to productive time, the varying proportions of earnings between the fixed, full time, supervisory staff and the productive workers and truckers, who vary both in numbers and in working hours.

The proportion of the total department payroll in each department, absorbed by supervisors and indirect labor of all kinds, including clean-up work done by the operators, is determined by special checks.

A percentage is then worked out, designed to balance out over a normal year's operations, which is added to the standard direct labor cost of each line to give a total labor value for the department production.

This amount which is calculated on each week's production figures for each department, is called the figured payroll, as distinguished from the actual payroll.

Foreman's Labor-Budget.

The figured payroll gives the labor budget for each department, and is recorded week by week in comparison with the actual payroll.

The gain or loss figures accumulate through the year and in recent years these gain figures have been made the basis of a scale of supervisor's bonuses, paid at the end of the year.

This has had marked effect in cutting down wasted time in nearly every department.

It will be understood that in slack seasons when production is low, perhaps only 28 hours' operation a week on reduced staff, any department will show a loss. which is offset by large gains in the rush season, so a yearly basis is the only fair method to calculate these bonuses.

Manufacturing Expense.

Manufacturing expense is applied as a percentage of the figured payroll.

This percentage is varied to suit the particular conditions of each department, determined by the usual method of analysis, and is designed to absorb the total manufacturing expense over a normal year's operation.

The manufacturing expense is very heavy. In addition to the usual fixed charges, taxes, insurance, lighting, heating and so on, the plant has to maintain a large boiler capacity for process steam, used in the cooking. There is also an engine running a small dynamo as a stand-by.

The Company is a heavy user of electric power as all their plant is run by electric motors and the lighting requirements call for lighting a large amount of floor space.

There is also a refrigerating plant, run by the ammonia system, which cools a large proportion of the factory, as well as the special cold tunnels for hardening newly coated goods, the compressors are run by electric motors.

Then there is the machine shop, previously mentioned; in addition to that the mechanical department includes a carpenter shop, pipefitter's shop and accommodation for sheet metal work and electric wiring work.

Cleaners (for the stair wells, passages, toilets, etc., outside the departments proper) yardmen and watchmen, are also included in the maintenance staff.

All this comes under the plant engineer.

The garage comes under the sales department; it is not included in the finished goods cost.

In addition to the services mentioned above there is a cafeteria, a first aid room, a laboratory and a factory cost office, which looks after the factory production records and finished goods ledger.

Actual manufacturing expense costs are, of course, accumulated by the ordinary accounting methods, through analysis of the payroll and through the voucher register, the payments being charged to the various expense accounts in the general ledger.

At the close of each period these are summed up and balanced against the applied expense, as gathered through the figured payroll percentages for the producing departments, as described above. Under-applied or over-applied expense is then disposed of through profit and loss.

It will be noted that this is one figure for the whole factory, actual manufacturing expense is not broken down through standing orders to the individual departments.

The large amount of clerical work which this would entail is not considered to be justified.

Standard Cost System.

It will be seen from this description that the company has all the elements necessary to set a standard manufacturing cost on each line. They are first the standard material cost, then the standard direct labor cost and finally the percentages for indirect labor and manufacturing expense.

Each department reports its production weekly and its budget figure is based on these reports.

There is an obvious fault here, as work in process is not taken into consideration, except twice a year at inventory time.

In some departments this does not matter as they practically clean up their work every day. In the box factory, however, it is serious as the amount of work in process standing on the floor will vary widely from one week to another, so any system based on the week's production of finished goods is bound to prove very inconsistent, which, in fact, it does.

While these differences iron themselves out over an accounting period, they are a serious detriment to the budget system, insofar as it is used as a running check on the efficiency of a department.

As regards variances it will be seen that the accumulated gain or loss figures in the department figured payroll accounts give a labor variance which is both quantity variance and price variance combined.

Material quantity variances are obtained at the closing periods by comparing actual and figured material consumption for the period at current standard rates.

There will be, of course, a price variance behind that, due to any differences between the actual amount paid for materials and the standard rates used in pricing the factory production.

Manufacturing expense variance has been already described.

Through these records the management has control over the cost price of its goods, a weekly check on department efficiencies as regards the amount of labor expended in total, and a semi-annual check on wastage of materials.

As these summaries were all in total figures for a week or a period, it was found necessary some years ago, during the depression, to install a time study department which goes into departments not making a satisfactory showing, breaks down and analyses the costs, installs bonus systems which, through the daily reports, furnish daily efficiency ratings on important operations and also sets and revises piece rates. Methods work is also done where practical.

This, in conjunction with the supervisors' bonuses, has had a general tightening-up effect all through the plant, stepping up efficiency all along the line.

The system requires a minimum of records and clerical work and works very well in this Company. The Company is an old, long established concern, the executive staff and supervisors have all been there for a long period and the very complicated work runs along with remarkable smoothness and lack of friction.

A high standard of discipline is maintained and labor turn-over is very low, the employees value their jobs and appreciate the fact that they are doing as well, or better, than they could do outside.

Objects of the Cost System.

The cost system is used to determine in advance the manufacturing costs on every line, and keep them up to date, so that the management can shape its selling policies with an eye to the best profit possibilities.

Knowing the actual costs it is possible to modify or withdraw lines which become unprofitable through changes in price levels, to soft pedal the less profitable lines and to turn on the heat on the good ones. As indicated, the system also provides a barometer of department efficiency and control of stock inventories.

Order System.

Since the confectionery manufacturer must be ready to fill orders on a large price list of standard lines, at very short notice, and since sales cannot be forecast in advance, orders must originate in demands for goods from the sales department to the factory and rush orders are a constant feature.

As demands for goods come in, the assistant superintendent will issue orders to the packing departments, these in turn order from the departments making centres. In addition to orders originating in this way, there is another set of orders for the foreman or forelady of departments packing assortments.

These assortments carry a stock problem of their own as there must be a full list of pieces on hand practically at all times, to pack any assortment that may be ordered. The goods keep perfectly in the air conditioned departments, in fact, the keeping matures the flavors and improves them. These supervisors order on their own authority, for centres to keep up their stocks of dipped goods. The box department gets copies of all orders for the stock room so that the foreman can plan his ordering to always have the

required boxes on hand when needed. The Chocolate Department always has all varieties on tap, as their manufacturing period is a long one, several days.

Cream Department.

Taking up the Bon Bon Division in detail we start with the cream department.

Soft centres for candies, as distinguished from the hard centres, are known as creams.

This department also manufactures marshmallows complete, the manufacturing processes being similar to cream manufacture.

The cream department draws its raw materials from stores, and sends its product to other departments, either for chocolate coating or panning, or simply packing.

Most cream centres have two stages of manufacture.

First a fondant is prepared in large batches of several hundred pounds. The process of making a fondant consists, briefly, in boiling a mixture, principally sugar and glucose, in steam jacketted copper kettles. This is boiled to a clear syrup, brought to an exact temperature, and then run through a cooling device into a machine known as a beater.

Some beaters combine the cooling and beating, the hot fondant syrup being poured on to a circular cooling plate about eight feet in diameter, on which the beater paddles revolve. The beater stirs and agitates the syrup, which presently crystalizes and turns to a white dough-like mass. This is the fondant.

Creams are prepared in steam jacketted copper kettles with power driven stirring devices. The fondants are re-melted, other ingredients are added, flavor, color, etc., and the result is a smooth liquid about the consistency of thick cream.

This cream is then transferred to the tank of a large machine, or combination of machines, called a mogul, which casts the centres in molds, printed in starch, which is contained in wooden trays which are passed through the machine.

Trays containing previously deposited goods which have hardened and set, are fed in one end of the machine. The trays are dumped, the goods are sifted out of the starch and discharged at the side of the machine. The trays move on, are refilled with starch, a new set of moulds is printed on starch and the moulds are then filled with cream from the tank, by means of a pump with a row of small jets which match the moulds printed on the starch. Each mould gets a measured drop of cream, to form a single centre.

The filled trays (usually called boards) are taken from the end of the machine, piled on hand trucks and taken away to the storage space to dry and set.

A mogul requires a crew of three men and usually three cream boilers to keep one mogul in continuous operation. This means a group of six men, and two or three of these groups are employed to operate the three moguls in the cream department.

The finished centres discharged from the moguls are collected on trays by girls who dust them off and pick out the defective centres for remelting. The good ones are sent to the dipping departments on a belt conveyor.

Pieces which require a nut or a piece of fruit in the cream centre are partly a hand operation. Trays are given a drop of cream in the moulds, then taken from the end of the machine to a table alongside, where girls drop in the nuts or fruit. The trays are then placed in the mogul again immediately in front of the depositor pump and receive the final drop of cream.

This has the effect of burying the nut or fruit in the middle of the piece. Exposed nuts are liable to cause the chocolate coating to turn grey.

One large mogul has two depositor tanks with a cherry dropping device between them which casts maraschino cherry centres complete in a single run. Other double deposits are also made on this machine, using two different creams.

Marshmallows start like a fondant as a syrup boiled in a steam jacketted copper kettle. This is put in a special high speed beater, gelatin is added and the result is a very light, pure cream, which is deposited by a special mogul machine, using a special starch, which is dried and tempered in a large drying machine geared to the mogul.

A group of five men operate this process at very high efficiency.

The marshmallows are ready to be packed for sale as they leave this machine and they simply drop down a conveyor to the packing floor.

Some marshmallows are given a special coating in the pan department, and are sold under the trade name of sugar plums.

These are the main operations in the cream department. There are a number of minor lines manufactured, calling for considerable hand work, Some of these are marshmallow lines, other jellies or crystallized syrup.

All employ the steam heated kettles, some use beaters, and all use the starch trays in some way or other.

There are also some other preparations, used in a similar manner to fondants and prepared in a similar way, known as mazettas and frappes. There are special beaters to prepare these goods. They become ingredients of creams at a later stage and present the same cost problems as fondants.

Fondants are also used in the hard candy department and they are sent there from the cream department as finished products of that department.

The question of fondants brings up a very important point about the cost system which I shall discuss and clear up here.

A single batch of a fondant weighing several hundred pounds becomes an ingredient in several different batches of cream, representing different lines of goods.

The fondant is a material for the creams and is charged to the creams at a single rate per pound like any other material. But this cost contains a share of the department labor and to charge the fondant in this way destroys the distinction between labor and material in the cream cost. In order to take care of this condition, each stage of the work is regarded as a complete operation in itself and is completely costed for material, standard department labor and expense. The sum of these three amounts for a fondant is expressed as a single rate per pound, when charging the fondant as a material at the next stage of manufacture.

In order to provide data for a complete figured payroll the foreman reports all his fondant production along with his creams and marshmallows, etc.

Each item has its standard department labor value. These values are

run up on a comptometer and give a figured payroll which covers all the department labor.

Every final cost is expressed as a single amount per unit, containing all three elements in correct proportions.

Since the complete standard labor cost of the production is recorded each week, and since the applied expense is based on this figure, then if we take the complete cost of goods manufactured at standard and deduct these amounts in total, the balance must represent the standard cost of materials required, which, when compared to the standard cost of the materials actually used, as obtained from the stock ledgers, will give the material quantity variance.

This is an involved method and only gives one over all check on some $500,000 worth of materials, but the alternative would be a regular ocean of clerical detail, and the management must be presumed to know its own business and interests in the matter.

The pay system in this department is almost altogether straight time, with group bonuses, based on efficiency, paid to the cream and marshmallow groups.

Group piece rates are paid on a few special lines, which call for a great deal of hand work. The cream and marshmallow work was formulated by time studying the various stages of the processes and setting a normal output measured in time values. The bonus consists of a percentage of the time saved.

Owing to the nature of the work only group bonus plans are practical. Supervisors are on a straight salary and participate in the supervisors' bonus plan outlined in the introduction.

Hard Candy Department.

This is a large department, using space on two floors, and comes nearer being a self-contained plant than any of the other candy departments, as it manufactures and packs a large number of lines ready for sale.

In addition it makes centres for the dipping departments in a large number of lines, these are sent down on belt conveyors.

Like the cream department it draws its materials from stores with the exception of some fondants previously mentioned.

These fondants are not charged to the department, since their cost, both actual and standard, has already been taken into account, as described in the last section.

Remember, materials are charged to the factory as a whole and the factory is credited with the standard amounts required to manufacture the goods delivered.

In making up standard costs on a line of goods, all material and labor items are gathered and the labor is divided up so much for each department working on the line.

These departmental labor totals are the basis for the figured payrolls and applied expense. I explain this matter here as it is the first time it has come up in the detailed description of the cost system.

It must be understood that the same principle applies wherever goods are processed in a succession of departments, so it will not be necessary to repeat the explanation.

There are three main lines of production in the department, hard candy proper (known as boiled sweets in England), caramels and nougats; perhaps I should add toffees as another line. In addition there are a few specialties which do not fall into any of these classes.

The department is divided into three main workrooms. First the cooking room, where all cooking is done in steam jacketted copper kettles, some of which are adapted for vacuum boiling, or in copper kettles over gas fires.

Cooling tables and pulling and cutting machines are also in this room.

Adjoining this is an air conditioned machine and packing room, where a number of hard candy, caramel and toffee lines are rolled and cut by machine and sometimes also wrapped in waxed paper by the same machine.

The familiar wrapped caramels and molasses kisses are examples of this class of work.

Candy canes (small ones), fruit tablets and suckers on sticks (known as pops), are also done by these machines.

These goods are then packed in packages for sale by girls, with the exceptions noted below.

On the next floor is the third workroom, or rather two small rooms. One is for marshmallow packing, the goods coming down from the marshmallow mogul by conveyor from the sixth floor.

The pan department adjoins this room and marshmallows for panning are trucked in there, and then returned to the packing room for packing, after they have been coated in the pans.

Marshmallow packing is done by teams of girls on tables fitted with conveyor belts.

Wrapped kisses and toffees from the cutting and wrapping machines on the fifth floor are dropped down through chutes and packed in the other fourth floor room. Most of these goods are packed in cellophane bags, or special printed folding boxes, the box factory making only the cartons which hold 12 or 24 units each.

There is a general similarity in the processes in this department.

Batches from the boiling kettles are poured out on the cooling tables, which consist of two plates with a space between, where cold water is circulated.

This space is closed all around the edges.

This table is prepared for the batch by placing square iron bars around the edges. This confines the batch and prevents it flowing over the edges of the table and enables the batch to level itself off.

Some lines are allowed to get cold and hard on the table. The side bars are then removed and the batch cut up into slabs, which are first rolled to the required thickness and then cut up into rectangular shapes by revolving knives.

Nougats and caramels intended for dipping get this treatment, as well as one prominent 5c bar line which is wrapped by machines direct in the cooking room.

Other batches are lifted as soon as they can be handled and taken to the machines in the machine room. Others are pulled either by machine or by hand. Pulling works air into the goods and lightens them up. Pulled candy is full of thread-like openings caused by air bubbles trapped in the goods being all drawn out over and over.

Some lines are cut up and finished by hand on work tables. A group of girls will assist the operator on these jobs.

Candy making is something of an art, and there is a lot of skilled hand work in connection with some lines.

The men's work in this department is almost all done by individual operators, as contrasted with the preponderence of group work in the cream department.

Operators will assist each other on heavy lifts and so on, and in some cases different operators will work on different stages of a job, where a succession of batches is being turned out on some one line.

The only really practical pay system for this work is straight time. Any system putting a premium on time saving might result very easily in a lot of spoiled batches and inferior goods.

There is, however, a well understood standard for a day's production on each line, giving the operators a mark to shoot at in practically any job they do. The packing operations, all done by girls, are practically all on piece rate.

There is one group bonus paid to the men and girls cutting up and wrapping the 5c bar referred to above.

A number of lines from the pan department are packed by the girls in this department, as the pan department has no packing facilities.

Consideration of the description given of this department would indicate that the expense rate should be varied on the different operations. One room is a heavy user of process steam, another is air-conditioned, and the numerous packing jobs make practically no demand on power.

However, since the finished work sent out from the department must carry the total expense in any case, a uniform department rate is used, the management not considering it would gain any advantage from breaking the expense down to a different rate for each class of work.

This is one of those numerous instances where theory and practice do not jibe very well.

Varied expense rates might show that some goods are actually less costly and others more so than is indicated by the uniform rate, but the net result is the same and the goods must be sold at the regular trade prices in any case.

Enrober Dipping and Packing.

This department is in a different building to the ones already described. As this building was acquired at a later time than the other it is referred to as the Annex.

Covered bridges for trucking, conveyor bridge and pipe lines join the buildings, so the whole plant is really under one roof.

The 5th Annex is an assembling department, where centres and liquid chocolate are brought together, the goods cooled and then packed.

It turns out a range of 5c bars, centres for which are prepared in the cream and hard candy department. It also dips centres for a number of the lower priced bulk lines. These are goods sold in 5 lb. boxes intended to be retailed from a show case to the customer's selection and delivered in an ordinary paper bag.

Until recently goods for a number of the cheaper packages were dipped here and sent to the packing department for package goods, to be packed.

This work is now being turned over to hand dipping as will be explained later.

Some goods from the pan department are sent to the 5th Annex for packing.

One very prominent 5c bar is partly processed in the department, before being conveyed to its special chocolate enrober machine. The girls who roll the centres in caramel and peanuts are on a group piece rate, the enrober feeders on straight time, and the packers on individual piece rate.

One or two more bars are also processed in this department, the processes being simple and not involving cooking.

This department is really two departments combined and the costs are kept for each division separately.

The enrober machines, of which there are five, pass centres through a bath of liquid chocolate then shake off and blow off the surplus and deliver the coated goods to a cooling box, where the chocolate is hardened as the goods pass through the box on the conveyor belt.

The goods are delivered ready for packing at the end of the box.

The centres are fed through the machines by girls, who arrange them in rows on the conveyor belts, of which there is a series in each machine.

Where the centres are receiving a bottom coat of chocolate, or passing through the enrober itself, they are carried on wire belts which allow the chocolate to pass through the belt.

The other belts are canvas, but after leaving the enrobers the canvas belts have paper belts on top of embossed plaque paper, which prints the firm name on the bottom of every piece.

The enrober room has to be kept at a temperature of 90 degrees in order that the chocolate will remain liquid.

It is divided from the packing room by a partition, as it is necessary to maintain a temperature of 62 degrees in there so the chocolate will remain hard.

The enrober machines themselves are very complicated. They use steam, cold water and compressed air, as well as electric power, and the first three services must be under the most delicate control to keep the chocolate in the machine at just the right temperature for coating and to deliver the goods with just the right thickness of chocolate.

This calls for a high paid expert man in charge.

The other labor in the department is all handling work.

The girls who put string decorations on the pieces as they leave the enrober, require a certain amount of skill, but the others can be very quickly trained.

Pay is straight time.

On the other side the work is nearly all packing and is run on piece work wherever practical.

Some of the piece workers are extremely expert.

Goods are packaged directly off the enrober belts where possible.

A little consideration will show that the belt must be practically empty by the time the goods reach the last packers.

Where the goods are intended to be packed in assortments they are gathered in storage boxes, one variety at a time, and the assortments are packed at packing tables away from the machine.

Some lines are sent to the hand dipping department for further chocolate coating, and these are gathered on trays (same as the starch machine trays) and trucked to the hand dipping room.

It will be noticed that the foreman makes two sets of production reports, one for the enrober room and one for the packing room.

The same goods will appear on each report to a considerable extent.

Goods sent on to the hand dipping and packing department, or which are being held in stock to pack assortments, will show only enrober costs.

Goods which have been packed show in the production report of goods delivered to the finished stock room. These reports in turn are entered on a daily form for each department, showing a detailed list and summary of finished goods for the department.

Each line of goods has two standard labor costs for the department, an enrober cost and a packing cost (except goods sent there for packing only).

The two sets of production reports are costed by the cost clerk to give the figured payroll, as previously described.

The packing room itself is air conditioned by means of cold air ducts.

The cold boxes where the newly coated goods are hardened receive cold air at about 45 degrees through direct connections from the cold air ducts.

This cold air comes from the refrigerating plant where it is chilled to a low temperature and passed through a washing spray, which takes out dust and dirt.

The chilling itself dries the air, as cold air cannot carry the same water capor content as warm air.

So when the air warms up again it is relatively dry and takes up any surplus moisture present in the workrooms.

Only in the worst spells of saturated humidity in the summer will enough moisture be present in the work rooms to produce sweating on the metal ducts. This dryness is very important in keeping chocolate in good condition.

Hand Dipping and Packing.

This department handles all the high class package work and some special bulk work in 5 lb. boxes, which is composed of hand-dipped string decorated work. It also does some packing for the pan department and the moulding department. It is purely an assembling department.

Centres come to it from the cream department and the hard candy department. Chocolate is supplied to the dippers at proper temperature by a chocolate division man who attends to a battery of tempering kettles in a small room partitioned off the department floor space.

Boxes and packing material, all cut to size for every line, are supplied by the box division.

The labor is all female except for the one trucker and a forelady is in charge of the whole department.

In busy seasons this department will employ over a hundred girls, and it takes up a full floor in the annex building except for the small chocolate kettle room mentioned above. The department is air conditioned and maintained at a temperature of about 60 degrees.

Like the enrober dipping and packing department in the 5th Annex,

it has two sets of employees and two independent sets of costs.

An important methods change is just being completed in this department, the hand-dipping is now being done on conveyor belts.

Chocolate dipping is really skilled work, and it takes a girl a long time to become expert in all the methods of stringing, each involving more or less varied sets of motions.

Under the ordinary system of chocolate dipping, each dipper has a work place at a long table, with a row of warming pans set level with the table, down the centre.

Opposite each pan, on each side of the table, is a stone slab or which the dipping work is done.

The dipper draws the chocolate out on the slab and cools it there to near the setting point. A lot of it does set and forms a crust with liqyuid chocolate on top in which the centres are dipped.

After dipping they are arranged in rows on squares of plaque paper in wooden holders called plaques.

The plaque paper can be embossed to print a name or design on the bottom of the piece.

The dipper decorates each piece with a string design, which is really a code telling what the price is.

The plaques are made to be fitted together in stacks, the ends being open so that air can circulate and dry the chocolate.

These stacks of plaques are taken to storage racks until they are needed to pack assortments.

The disadvantages of this system are that the dipper spends a considerable percentage of her time handling plaques instead of dipping. Also the plaques take up a lot of space, either empty or full, and cannot store more than one third or one quarter the amount of goods on a given rack space as compared to storage boxes.

The stored goods are also exposed to light and dust and to all atmospheric changes in the room.

Packing Department.

The packing work is done by teams of six or eight packers, working at large tables.

The table will be covered by a spreading of opened boxes and the assortment to be packed will be placed on a low shelf down the centre of the table.

The girls pack first one piece and then another, working along the spreading and putting a piece, or more than one piece, in each box, according to the sample.

Each line is packed to a definite pattern and sample boxes are always on hand as a check and guide to the packers.

Even at that the work calls for a lot of memorizing, the handling of the pieces is a skilled operation, and the whole job has to have an artistic attractive appearance when finished.

Green girls take a long time to become expert in this department.

For example, when getting the assortment from the racks, twenty-five or so different kinds must be located and brought to the table in varying amounts to pack the spreading, and arranged along the centre shelf in a definite order as they go in the box.

The girls do this work generally without a hitch, the leader giving each her quota to carry to the table.

The six girls will carry between 300 and 400 pounds of goods to the table in their arms, for a single spreading.

A cost on a package will depend on the pieces used in the sample.

Each will have its own line of costs, summed up in a unit cost per pound and each will form a certain proportion of the total weight.

A factory cost for the contents is thus calculated which, of course, includes dipping.

Then there is the packing cost and the box division cost for the packaging materials.

The pay system in the dipping department is by group piece rate for the girls on each belt. Individual piece rates would be better, but it is not practical to separate, weigh and record each packer's output.

There is a reservation that if the group piece rate is below a girl's time rate, the time rate will be paid instead.

There is still accommodation in the department for a few table dippers, who handle special decorated pieces and odd lots to fill up assortments. The table work always paid straight time, but the girl's time rates were raised when their production increased. This has left several rather highly paid girls in the department.

The straight time system is still in force for the remaining table dippers.

The packing table work is all on straight time, the management insisting on careful artistic work.

Some of the expensive packages are really very rich and striking in appearance.

Piece work is all right on the cheaper goods, but not on work of this class; that is the attitude taken in the matter.

Packing and Cracker Jack.

This is a small department which wraps and packs moulded chocolate bars from the moulding machines and performs some other functions in connection with packing.

The wrapping work is all done by machine.

The moulding machines and cold boxes for hardening the bars are part of the chocolate division.

Moulded bars are made all exactly alike in shape so it is practical to wrap them by machine.

As they come off the moulding machine belt the hardened bars are knocked out of the moulds (which go back on a return belt to be refilled) and packed in trays. They are then in charge of the packing department.

The wrapping machines do the complete wrapping job and the wrapped bars are packed 24 in a box.

The department also has a machine for packaging some Glosette lines and another for wrapping enrober dipped pieces in tinfoil.

The last mentioned pieces are used to give a touch of bright color to the top layer of fancy package lines.

There is another machine for making tubes out of rolls of cellophane. These are cut to any desired length and when the end is sealed, the tube becomes a bag.

The foreman is an expert mechanic, who adjusts and maintains his

machines and keeps the department running smoothly.

A forelady directly manages the girls.

The Cracker Jack department is included with the 3rd Annex under the same foreman, although it uses space on the third and fourth floors in the original building.

It is a complete self contained straight process, with only one product, so the cost problem is a simple one.

Cracker Jack is a popcorn, peanut and molasses preparation with a very large sale. Judging by the production figures, there is more truth than poetry in the slogan on the box, "The more you eat the more you want".

The cooking, including popping, is done on the fourth floor and the goods drop down to the third floor on to a conveyor belt, which feeds them to a most elaborate packaging machine, which measures the goods, opens and fills an inner carton, wraps the carton in paper which is sealed with hot wax, then slips it into an outer printed carton (previously opened by the machine) which it then closes and glues.

At the end of the machine the goods are packed by girls 24 in a carton, some 100 in, and the cartons packed in corrugated paper boxes for shipment.

This packaging operation is an operation of similar kind, but on a much more elaborate scale than the 3rd Annex wrapping machines, so it is a logical arrangement to combine the departments, particularly as the foreman is capable of giving the machine expert attention.

It is a question whether the Cracker Jack making room should not have a different expense rate from the wrapping machine room, but the same arguments apply here as in the case of the fifth floor.

Girls on the bar wrapping machines are on a bonus scheme of payment, the bonus running so much a box for boxes packed in excess of a certain quota.

The Cracker Jack crew are all on straight time. Cracker Jack making and the department trucking work are performed by men.

The 3rd Annex and the Cracker Jack machine room are air conditioned and kept at around 60 degrees.

This concludes the particular description of the various Bon Bon division departments.

Material Forms.

Form 1. This is an ordinary requisition made up in pads. They are not used in every case as the purchasing agent keeps one stock ledger himself and the box factory stock clerk the other.

The purchasing agent makes out orders himself when he sees new supplies are needed in any line from the ledger balance.

Form 2. A special order form printed for the Company and has serial numbers, so that the file can be checked to make sure all copies are accounted for. For this reason I had to make a copy of the form.

The serial number is also the order number as noted on the form. This form is in triplicate.

Form 3. A receiving slip, also with serial number. One copy goes to the ledger keeper, the other is filed by the stock room foreman.

Form 4. Ledger sheet for one particular material, showing receipts, issues and balances in quantity only. As the materials are charged to the factory at standard cost and the factory credited with standard value of ma-

terials required for its finished production, it is not necessary to cost individual entries.

At the end of a period the totals will be costed.

Form 5. A cost card to go with a ledger sheet and give a continuous record of the cost of each kind of material bought. This card is not adequate for present conditions but should have additional columns for exchange, sales tax, and war tax. At the end of each period the actual cost of the material bought for the period can be found and compared with the standard cost.

The standard cost is revised every three months and oftener if large changes occur.

The standard cost is the unit cost given to the cost clerk to use in pricing the factory production. The intention is to keep this as close to the actual cost as possible.

Form 6. This is an ordinary form made up in pads numbered 1 - 100. It is used by the foreman to order materials from the stock room but not to any great extent as most orders are phoned and noted on a pad at the phone. The truckers endorse actual quantities delivered on the order forms and the pads and from these records the next form is made up.

Form 7. This form records deliveries from stock. It is made out in duplicate, one copy going to the ledger keeper, the other remaining on file. The form has serial numbering to ensure that the file is complete. The issued section of the stock ledger is filled in from these forms.

Form 8. This is the regular bin ticket kept with the actual stock and filled in by the truckers.

As these forms become filled up they are checked against the corresponding ledger sheets.

Forms Used in Recording Costs.

Form 1. Figured payroll sheet for one producing department for a period. Debit and credit columns show differences between department time clock cards and amounts actually chargable, as actual payroll.

Form 2. Formula sheet for recording standard costs in a book. This provides for changes due to variations in price levels for materials or labor. The rates necessary to price weekly reports for figured payrolls and expense are taken from the formula book and tabulated for convenience.

Form 3. Sheet for one line in finished goods ledger.

Form 4, 5, 6, 7, 8 and 9. These are used to report daily finished production from the factory cost office to the accounting department.

Form 10. Clock card.

Form 11. Debit and credit slip, one or more from each department, each week, to the cost clerk, if required.

Form 12 and 13. Voucher Register headings, with regard to materials coming in on invoices it would not be practical to separate Chocolate and Bon Bon materials completely. For example, both use milk and both use sugar. An analysis of the production or special reports, say from the Chocolate Department, would enable a distribution to be made at the close of a period.

Cream and Marshmallow Department.

Form 1. A simple cost sheet for use with some product which is processed in one department.

Fondants are a good example of this sort of production, as a fondant loses its identity in the next stage of manufacture.

A sample fondant cost, with fictitious formula and times, is shown to illustrate the use of this form.

Form 2. This is a full cost sheet, designed to follow a given piece through the full process of manufacture to the point where it is placed in storage to be later packed in an assortment.

A sample cost on a line is shown, again fictitious.

In the case of 5c bars, or some lines which are later packed all one kind in a package, the packing cost could be shown at the foot of the sheet.

In addition to this sheet, a chocolate division sheet and a box division sheet, would also be required to make up a complete manufacturing cost. Standard costs are gathered by these sheets for the various lines.

As stated in the introduction it would be possible to cost every order in this way, and have a complete job cost system with all productive labor and all material accounted for in detail. In practice, however, the cost would outweigh the advantages, for this type of business.

Form 3. Production and time report, filled in each day for the marshmallow and cream groups, one for the marshmallow and one for the creams. Production is shown on one side and time on the other.

The group efficiency is determined by applying the formula times to the production and comparing the time value thus figured with the actual time used. Bonus is a percentage of the time saved. Bonus earnings are figured in the factory cost office and tabulated for the week on a plain sheet which is sent to the pay clerk, who adds the bonus to the time earnings on each man's clock card.

Form 4. This is a simple piece work report, very compact compared with the others. This is practical here as there is really only one piece work job, it covers two lines, but the operations are similar and the same rates apply. Time spent is shown, as it is necessary to subtract this time from the total time on the clock card in order to determine the amount of time work for the week.

Form 5. This is a box factory production report form but it is used by some other foremen to report production which is finished work for them, but is not completed for sale, requiring further processing or packing.

As this applies to all the 6th Floor work, this form serves as a weekly production report, from which the figured payroll is worked out by the cost clerk.

We have here the forms for gathering standard costs, actual costs, if we include the clock cards for straight time payments (labor only, as materials are charged generally to the factory as a whole), then production report from which standard department labor for the reported production is figured, using the standards from Form 1 and 2.

The expense rates applied to the standard department labor for the reported production, give the applied expense.

The same procedure will be observed in all the other departments described.

Hard Candy Department.

Form 1. This is a cost sheet for use with a simple product which does not require to be dipped in another department, where the whole standard

making and packing cost apply to one department.

The package will be a box factory cost, or perhaps a material cost, for container bought outside.

A sample cost is shown on this sheet.

Labor cost would be based on several runs and would represent a reasonable standard. It must be remembered that processing confectionery batches is not so exact a matter as running a lathe, or work of that kind, and a little lattitude must be allowed in setting-time allowances.

Form 2. Full cost sheet designed to follow a product right through the factory, or up to the point where it is placed in storage awaiting packing in some assortment.

A sample cost is shown. Standard costs are gathered through this form.

Form 3. Piece work slip for one day's work for 1 piece worker. Time work, if part of the day is on time rates, would be also shown.

Form 4 and Form 5. Either singly, or together, these forms carry a week's earnings for a piece worker. They are sent to the pay office all filled in with the daily slips (Form 3) clipped to them.

The term "week work" refers to time worked on time rates, this is shown as one item collected from piece work slips.

Form 5 refers to work done in the packing rooms on the 4th Floor (see my report on the work of this department). Time clock cards cover all other labor cost and also show hours worked by piece workers.

Form 6. This is the regular production report covering finished goods sent to the finished goods stock room. It is made out from the delivery slips. The report is posted to the finished goods ledger and is the basis of the reports of the production for the department in finished goods, which are recorded in the main office. The report is costed by the cost clerk for the departments share in the production reported, to make up the figured payroll.

Form 7. Delivery slips for finished goods. They are in a distinctive color for each department.

Form 8. This is really a box division form, but is used generally over the plant to report production which is sent from one department to another for further processing.

The fifth floor uses this form to report centres being sent to the dipping departments and one or two other things.

The report is costed by the cost clerk to complete the figured payroll.

Enrober Dipping and Packing.

Form 1. Daily report of chocolate used and hardened chocolate returned to the chocolate department for re-tempering; it is not correct to call this material scrap. This form is filled in by the enrober operator for the foreman.

Form 2. A weekly summary from Form 1, showing chocolate actually used each day in each style of coating. This is filled in by the foreman and sent to the cost clerk, as a record of chocolate supplied by the chocolate division to the Bon Bon division.

Form 3. Weekly production report for one enrober machine. Fgured payroll for enrober work is based on this form.

The hour column would have only one entry for each day showing total hours worked by the machine. The time column (second last) would show machine hours for the week.

The class column would be entered by the cost clerk with the price class of the line.

With this information a gured payroll for enrober work is worked out.

Form 4. A record of a piece worker's earnings for one day. If the day is part time work and part piece work, this is recorded on the form.

Form 5. A daily summary of piece work production for the department.

Form 6. This is a weekly pay sheet for a piece worker and is sent to the pay office with the daily piece work forms clipped to it.

The line marked "Time" at the foot of the sheet takes care of the time not spent on piece work, during which the girl earns her regular time rate.

All piece workers punch the clock the same as the others. The clock card then shows total time worked.

The pay clerk will write on the clock card the hours of time work, with earnings and add the piece work earnings in total, to show the week's pay.

Form 7. This is simply a memo, to show how efficiently the enrober work is being carried on. This material is really scrap, but it is reclaimed in another line, as mentioned in my report on the department. The report is not costed, as mentioned in my introductory section. A small percentage is added to all standard costs to cover wastes and losses.

Form 8. This is the regular finished goods report, made up from the delivery slips to the finished goods stock room.

It is posted to the finished goods ledger, and is the basis of the production reports sent to the main office from the factory cost office.

Figured payrolls are based on the information in this report. The figured payroll represents the standard labor cost of the department's share in the production.

Form 9. Delivery slip to finished stock room.

Form 10. Cost sheet would show dipping cost for enrober in proper section, packing costs would be added at the foot if applicable.

Dipping and Packing.

Form 1. This is a form for reporting production and group piece rate earnings on the hand dipping belts. Each piece has a rate per 100 lbs. based on number of pieces handled with allowance for larger pieces, so that a full belt always is worth a certain maximum figure. The report gives production and time spent. The actual details of the production are necessary for the piece rate calculation, the main office will only record poundage and earnings. There is no inventory kept of the pieces in the storage racks, the forelady can see by glancing over the racks how her stock stands and what she must order to be in a position to pack any assortment. The goods are weighed up and valued at inventory time to close the accounts.

The figured payroll is arrived at very simply by adding a percentage to the total piece rate earnings to cover the girls serving the dippers, stripping the belts, etc.

Form 2 and Form 3. These cards record the output for one table dipper, per day, per week. The goods are divided into only a few classes under this system. The weekly summaries are recorded in a book, one page for each dipper, on the same plan as the gain and loss accounts for the departments.

This gives each girl's record at a glance showing how her output com-

pares in standard labor cost with her earnings. As noted in the description of the departments, this book was used to adjust the girls' pay rates.

Form 5. Regular cost sheet with section for gathering standard dipping costs. Packing costs for special packages, all one kind, could be entered at the foot. Packing costs for assortments are in various standard classes and a new box would fit into one or another of these and not require a special report.

Form 6 and Form 7. Finished goods production reports. These are explained in connection with other departments.

Wrapping and Cracker Jack.

The regular production report is the only form used in this department.

In the case of wrapped bars sent to other departments for inclusion in special Christmas assortments, the foreman will note them in addition to the goods he sends to the stock room and cost clerk will include them in the figured payroll, the same applies to wrapped pieces for packages and to cellophane tubes.

A standard labor cost on a new line would be simply a calculation of machine capacity, reduced by a certain percentage, balanced against a crew cost.

It would seem that machine rates would be the best method of applying costs in the 3rd Annex and particularly the Cracker Jack room, but the management prefer to use a uniform system throughout, based on department labor cost. It certainly simplifies handling the costs and operating the system and the net result is the same, since the labor is a very stable element for each machine, all overheads are based on this labor.

Bonus earnings for the girls on the wrapping machines are just listed each week on a plain sheet and sent to the pay clerk, who adds them to the time earnings as figured from the clock cards.

This concludes the description of the forms used in gathering standard and actual costs through the Bon Bon Division of the factory.

The cost clerk and her assistant, of course, keep lists of standard labor costs for each line in each department, and production reports are quickly costed into figured payrolls on comptometer machines.

The applied expense entries are simply obtained, by figuring the proper percentage of each figured payroll.

The special forms used for summarizing standard costs and department figured payrolls are described on another sheet.

Hudson Bay Company's Welfare Plan

EMPLOYEES' RETIREMENT FINANCED THROUGH DOMINION GOVERNMENT ANNUITIES

Reprinted from Manufacturing and Industrial Engineering.

Effective May 1, 1940, the Hudson Bay Mining and Smelting Company, Limited, Flin Flon, Manitoba and its subsidiary companies inaugurated a threefold plan to provide for the welfare and security of the company's employees resident in Canada. A brief outline of the plan follows.

Available to both male and female employees, participation is voluntary with respect to all those who were employed by the company on the effective

date of the plan, and is designed to make provision against the following contingencies: (1) insecurity in old age; (2) death; and (3) loss of remuneration through non-occupational sickness and accidents. The first of these will be financed by joint contributions of the company and the employees. The second will be financed solely by the company and the third will be a co-operative scheme shared equally by the company and the employees.

Retirement Pension Plan.

To provide retirement income for the employees under the plan, annuity contracts will be purchased from the Annuities Branch, Dominion Department of Labour. Each participating employee will pay a percentage of his or her earnings into a fund and after normal retirement will receive a pension each year equal to at least 45 per cent. of the total amount paid in. This retirement pension will be paid during the remainder of his or her life and is guaranteed for ten years in any event. (It was provided in the regulations that the retirement pension plan was to become effective only when at least 75 per cent. of the eligible employees agreed to participate. Subsequent information indicates that 1,550 or 80.5 per cent. of the total number of employees of participating companies have joined in the plan).

Eligibility.—All employees who have completed two years of continuous service with the company on the date of initiation of the plan are eligible for membership, and other employees become eligible on the completion of such a period of service, providing that in the case of males they have not reached their 65th birthday and in the case of females their 60th birthday. Provision is made whereby employees who have not completed the required two years of continuous service upon the effective date of the plan may contribute 3 per cent. of earnings, deducted monthly, and every new employee taken into the company after the effective date shall contribute 3 per cent. of earnings to the fund. These contributions are to be held in trust until the completion of two years of service, when the money will be paid over in a lump sum to the Annuities Branch. Refunds of contributions are provided in the event of employees leaving the employ of the company during the probationary period.

Contributions.—Every member of the plan will contribute 3 per cent. of earnings deducted monthly, the company paying the balance necessary to provide the employee with a retirement income.

Death Benefit.—In the event of the death of an employee prior to his normal retirement date, the employee's own contributions to the fund, together with 4 per cent. compound interest up to the date of his death, will be paid to his estate in a lump sum. The company's contributions on behalf of such deceased employee will be credited with interest against premiums falling due in respect of other members of the plan.

Sickness and Accident Benefit.—The plan provides that no contributions will be made for any period during which no earnings are received and, therefore, no pension will accumulate. Authorized leave of absence, due to sickness, accident or other reasons are not to constitute termination of service for the purposes of the plan.

Employees' Advisory Committee.—A committee of five, composed of one participating member of the plan from each of four sections of the company and one member elected by the participating employees at large, will

be established "for the purpose of conveying to the company the views of the participating employees and considering and consulting with the company in regard to the operation of the plan generally", and in regard to matters of application and interpretation of the regulations governing the fund, etc.

Group Life Insurance.

Under the group life insurance section of the plan present employees in the service of the company on the date the pension plan became effective, except those who by reason of injury or illness were not then engaged in their regular employment, are eligible to the benefit of group life insurance, provided that such present employees have joined the pension plan, or have signed application in writing which provides for their becoming a member of the pension plan when eligible.

Employees who were absent from active work on the date the pension plan became operative, because of sickness or injury or for other reasons, become eligible employees for group life insurance on the date of their return to active work.

Under the pension plan regulations, membership therein is a condition of employment; therefore all new employees become eligible for group life insurance benefits immediately on their starting to work.

Cost of Insurance.—Insurance under the plan is provided without charge to the employee, the entire cost being borne by the company.

Schedule of Insurance.—The maximum amount of insurance for which any employee may be eligible under the plan is $1,500. The following schedule of insurance is appended to the plan:

(a) Eligible employees with less than 2 years of service ..... $ 500
(b) Eligible employees with 2 or more years of service 1,000
(c) Eligible employees with 2 or more years of service will also be granted additional amounts as follows:
For dependent wife 200
For each dependent child, not exceeding three, all under 19 years of age 100

Benefits.—No medical examination is required for any employee for any amount of life insurance provided under the plan. The insurance is payable to the beneficiary named by the employee, and the insured is to be provided with an individual certificate of insurance showing the amount of insurance, name of beneficiary and conversion privileges.

If an employee continues as a member of the pension plan until normal retirement, his insurance does not terminate until three months after such retirement. If he leaves prior to the normal retirement date, the insurance terminates thirty-one days after leaving the company's service. The plan also provides conversion privileges should an insured employee leave the company's employ.

Sickness and Accidents.

In order to provide benefits for employees in the event of disability due to sickness or non-occupational accidents, the company will co-operate with the employees' advisory committee and will contribute equally with the employees towards such benefits as may be agreed upon. It was announced that a supplementary booklet to be published at a later date will set forth the details of this section of the plan.

SITUATIONS WANTED

Young man, single, with many years' experience in Banking and Accounting. Graduate in Cost Accounting, and with experience as Office Manager, seeks change in position. Fully capable of taking charge, and remuneration asked only moderate for good start. Well recommended and is earnestly seeking a real opportunity to display knowledge and ability. Apply Box 45, "Cost and Management".

A thoroughly experienced Cost and Industrial Accountant desires position with sound company. Well versed in cost and production work and all phases of accounting. Experienced also in Office Management, Purchasing, etc. Particularly well versed in the Canning and Food Industry. Apply Box 48, "Cost and Management".

Young man, at present engaged, seeks change to sound progressive company. Has had experience as Chief Accountant, Cost Accountant, Public Auditing, Payroll work, etc. Thoroughly practical and experienced. At present working in Ontario, but distance no object for good position. Box 51, "Cost and Management".

Young man, 10 years' bank expeirence, studying higher accounting and cost accounting, at present employed in Western Canada, desires position with industrial company with prospects of advancement to good man. Will go anywhere. Apply Box 52, "Cost and Management".

Young man, married, with many years' experience in Accounting, Cost Accounting and Purchasing, Office Management, etc., at present employed in Mining Office, seeks change. Would prefer position with sound company in Mining Industry or Industrial company. Distance no object if position is sound. Highest references. Ability unquestioned. What have you? Apply Box 56, "Cost and Management".

Young man, with some experience on Inventories and Stock Ledger work. Student of Accounting and Cost Accounting. Desires position in Toronto or vicinity. Apply Box 57, "Cost and Management".

Young man, with both complete Junior and Senior Matriculation, two years at University on Mathematics and Physics, and at present studying Accounting and Cost Accounting, is anxious to obtain position. One year experience in Accounting and four years' experience in Stores, Purchasing and Records. What have you? Apply Box 58, "Cost and Management".

Young man with experience in Banking, Time Study, Stock Ledgers, Bookkeeping, Purchasing, etc. Good education and at present studying Accounting and Cost Accounting. Desires position with opportunities for advancement. Apply Box 60, "Cost and Management".

Young man, well versed in banking, desires position with industrial company. Graduate in Accounting. Salary very moderate. Apply Box 61, "Cost and Management".

Married man with several years' experience in Cost Accounting, especially in mining. Good clerical experience, desires position. Go anywhere. Not subject to military service. Apply Box 62, "Cost and Management".

Accountant with good experience as Cost and Industrial Accountant; also several years' experience in the Public Accounting field, is anxious to obtain position with sound industrial company, preferably in Ontario or Montreal. Apply Box 63, "Cost and Management".

Young man, with some Cost aand Bookkeeping experience. At present a student of Higher Accountancy and who has been compelled to take other work temporarily. Is anxious for chance in cost work. Willing to accept small salary to start. Apply Box 64, "Cost and Management".

EMPLOYERS

We have on our list several young men with experience and who are students of Accounting and Cost Accounting, who are anxious to obtain positions. Why not communicate with us when filling vacancies?

Hamilton Briefs

The latest member to be called for Active Service in His Majesty's forces is Colin Glassco of the Hamilton Chapter, who now holds a commission in the R.C.N.V.R. Good luck, Colin.

Charley Wynn, popular Vice-Chairman of the Hamilton Chapter, has "been and gone and done it". Charley was married quietly on September 12. All without fanfare. Wait until the "gang" hears of this.

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Chapter Notes

Many chapters report excellent progress in connection with chapter programs for the coming season.

Toronto will commence on October 1st, and will hold a joint meeting with the Hamilton Chapter at Toronto on October 22, making the return visit to Hamilton on November 6. Hamilton will commence on October 9, Windsor October 3, Montreal on October 4, and London on October 17.

Kitchener will likely commence on October 17 also, while Niagara will start its operations on October 22.

Student sections will operate in Toronto, Hamilton and London this season, while similar sections will be organized in Niagara, Kitchener and Windsor with a possibility also in Montreal and the western chapters.

Efforts are being made to stimulate interest in other sections of the country and to organize new chapters this season, and it is expected that some definite news in this connection will be available for the next issue.

Hamilton Chapter will really be first off the mark this season as a golf tournament has been planned for the Glendale Golf Club on Friday, September 27.

This promises to be a gala affair although, judging from past affairs, the golf is not likely to be so hot, with one or two exceptions.

Harold Wright, Charley Wynn, Bill Smitton and Walter Furneaux usually provide the high spots so far as golf is concerned.

COST STUDIES PUBLISHED BY THE SOCIETY

(Copies available at 50 cents each).

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